



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,218	08/01/2001	Matthias Kloppmann	DE920000018US1	5313

25259 7590 12/05/2005

IBM CORPORATION
3039 CORNWALLIS RD.
DEPT. T81 / B503, PO BOX 12195
REASEARCH TRIANGLE PARK, NC 27709

EXAMINER

VU, TUAN A

ART UNIT PAPER NUMBER

2193

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,218	KLOPPMANN ET AL.	
	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-10 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 9/13/2005.

As indicated in Applicant's response, claims 1-5 and 11-21 have been canceled; claim 6 amended, and claims 22-26 added. Claims 6-10 and 22-26 are pending in the office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al, USPN: 6,199,195, and further in view of Baker et al., "Meta Object Facilities and their Role in Distributed Information Management Systems", paper 1997, *The Centre for Complex Co-Operative Systems Faculty for Computer Studies & Mathematics*, CERN, Geneva; URL: <http://www.aps.anl.gov/conferences/icalepcs/97/paper97/p076.pdf> (hereinafter Baker)

As per claim 6, Goodwin discloses a method for building process-based applications, in particular workflow-based applications, using a development environment for process-based applications, the process-based applications being based on at least one process model containing at least one process step, in particular at least one activity hosted by a process management system (e.g. col. 10, line 54 to col.11, line 17; Fig. 3; *business logic, unified models* – col. 16, line 65 to col. 17, line 27), where at least one of the process steps is to be implemented by at least one stored procedure, said method comprising the steps of:

accessing metadata for the at least one process step in the development environment (e.g. Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54);

extracting, from the accessed metadata, information needed to derive required definitional data for at least one procedure to be stored (e.g. *templates, template parser* – col. 13, lines 20-56 ; Fig. 6; col. 14, line 61 to col. 15, line 5);

transforming the extracted information into definitional data for the at least one procedure to be stored; and creating stored procedure definitions (e.g. Fig. 5-6; col. 13, line 63 to col. 14, line 9 – Note: using class definitions from IDL and MOF files to create instance of object classes reads on defining procedures in application memory) based on the definitional data; the accessed metadata including a structure of at least one step, any individual steps that make up the one process step, and a linkage to components that implement the individuals steps (e.g. col. 12, line 63 to col. 13, line 1; *logical model, structures and behaviors* - col. 11, line 26-55 – Note: link and object/step or structure within a UML model defining a behavior instance reads on one step and individual steps making up a process step and linkage to components implementing such process)

Goodwin does not explicitly disclose that the process management system is a *workflow management system* and wherein the development environment is part of the workflow management system but discloses framework using modeling tool for layout business activities and logic (e.g. col. 10, line 54 to col. 11, line 17; Fig. 3; *business logic, unified models* – col. 16, line 65 to col. 27; *business logic* - col. 17, lines 2-28; Background& Summary of invention); hence the framework for complex applications using UML or Rationale Rose (including user and roles) type of modeling for implementing a business application logic is strongly indicative of a

form of workflow management system having steps to accomplish a logic. Using the same modeling tool analogous to Goodwin is the method by Baker, teaching using it in a work flow management system (see Ch. 5-6). It would have been obvious for one of ordinary skill in the art at the time the invention was made to enhance Goodwin's business logic implementation/management framework so that it has the such logic is represented in terms of workflow system using the same tool concepts (MOF, UML, database query, object meta data) so that the distributed aspect of framework as taught by Baker can take into consideration the interaction between human and machine activities suggested via the Unified modeling tool which are addressed in a workflow management system as taught by Baker (see chapter 5 top para).

As per claim 7, Goodwin discloses generating at least skeleton information for the at least one stored procedure in a database hosted by a database management system by using the stored procedure definitions (e.g. *describing classes* - col. 11 line 66 to col. 12, line 1; *software classes maintained by developers* - col.12, lines 54-57 – Note: MOF, and meta data reads on skeleton of class definitions).

As per claim 8, Goodwin discloses generating a frame of code for the at least one stored procedure (e.g. Fig. 5-6 – Note: IDL being used to assemble class being used for the template reads on frame of code being generated via a meta language).

As per claim 9, Goodwin discloses storing of stored procedure definitions into a metadata store hosted by a database management system (*Schema server 314, 316* – Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54) hence has disclosed inserting definitions therein.

As per claim 10, Goodwin does not explicitly disclose extracting required definitional data is at least signature information for each stored procedure contained in the metadata store, or

Art Unit: 2193

at least topology information required to locate stored procedures contained in the metadata store hosted by the database management system; but based on the purpose of the MOF database (Fig. 5-6; col. 11, lines 26-35) the limitation is disclosed, and the topology of information in a MOF tree is described via a IDL.

4. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicholson et al, USPN: 6,631,519 (hereinafter Nicholson); in view of Muehlen et al., “Workflow Process Definition Language- Development and Directions of a Meta-Language for WorkFlow Process”, September 1999. Proceedings of the 1st KnowTech Forum (hereinafter Muehlen).

As per claim 22, Nicholson discloses a method for generating definitional data for stored procedure that implement activities, the method comprising:

accessing a first set of metadata that represents definitions of individual activities for a process (e.g. step 212, block 250 – Fig. 2);

generating therefrom a second set of metadata needed to invoke associated stored procedures (e.g. steps 216, step 232, 218; block 252 – Fig. 2; col. 8, lines 59-60);

extracting information needed to derive definitional data for the associated stored procedures (step 216, step 232 – Fig. 2) that implement the activities in a format suitable for a transformation component (e.g. step 242, step 218 –Fig. 2), wherein the transformation component generates stored procedure definitions (step 232, –Fig. 2; col. 9, lines 10-14);

transferring the extracted information to the transformation component (step 242, step 218 –Fig. 2); generating by the transformation component procedure definitions based on the extracted information (step 232, 252 –Fig. 2; col. 9, lines 10-14);

Art Unit: 2193

using the extracted information to define respective stored procedures by issuing SQL Description Definition Language statements (step 218, 232 –Fig. 2; col. 9, lines 10-14; col. 7, line 45 to col. 8, line 6).

But Nicholson does not explicitly mention about transferring stored procedure definitions to a DBMS, and wherein the DBMS stores the definitions in a local metadata store; nor does Nicholson explicitly recite inserting by the DBMS said stored procedures in the metadata store in the DBMS. It is noted that stored procedures used in SQL translator of Fig. 2 reads on procedures being persisted for DBMS purposes; hence definition of procedures being reused or evoked by the SQL converter entails that the definitions are persisted; and it would have been obvious for one skill in the art at the time the invention was made to ensure that Nicholson's stored procedures be transferred and stored in DBMS systems in order to make use of such meta definition in as intended by the process by Nicholson (see col. 9, lines 10-14; blocks 250, 252, 254, 218 - Fig. 2).

Nor does Nicholson disclose definitions of activities for process models that are used by a Workflow Management System and a associated Environment for Process-based Applications; nor does Nicholson specifically teach deploying a process-based application using the inserted stored procedures stored in the DBMS; and invoking the stored procedures in the DBMS by using currently executing workflows in the WFMS. By teaching IDL for developing applications in a COM environment to built into applications associated with a database (see col. 9, lines 21-37), Nicholson has taught Process-based Application environment using stored procedures being persisted by a DBMS as addressed above; and invoking the procedures as presented to build applications components (see bottom dashed line - Fig. 2) . As for the

Art Unit: 2193

Workflow Management system being associated with the use of Process-based Applications, Muehlen in a similar system to create meta-language via mapping Definition Language and XML analogous to Nicholson (see ch. 2.1-2.2), Muehlen discloses Workflow Process modeling as well as a interchange process specification language to support interaction within the targeted applications including its activities and relationship between objects defined for such activities (ch. 2.3). Since interface Definition language is well-recognized as to act as interchange format between code diversities as mentioned by Nicholson (see col. 7, lines 15-23; col. 9, lines 16-30), then it would have been obvious for one skill in the art to apply the process-based applications by Nicholson as mentioned above so that it also be used to support a Workflow Process management system as suggested by Muehlen to address logic and functionalities of a applications given the interchangeable capability of the definition language as mentioned by Nicholson and how this is used in support of workflow management system via modeling and accommodating model to target application code implementation by Muehlen (see abstract, *Workflow management system* - ch. 1.1).

As per claim 25, this claim is the system claim version having means to perform the limitations corresponding to claim 22 above, hence incorporates the respective rejection to address the limitations as recited therein.

5. Claims 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al, USPN: 6,199,195 (hereinafter Goodwin); in view of Bowman-Amuah, USPN: 6,442,748 (hereinafter Bowman)

As per claim 23, Goodwin discloses a method for continuously retrieving changed information about all stored procedures within a network environment, the stored procedures

Art Unit: 2193

being accessible from a given network node (client 338 – Fig. 3) in the network environment, the method comprising:

in response to determining that a the metadata is required by a development system (e.g. Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54 – Note: submitting metadata to a development model inherent teaches that data is required for such modeling framework),

reformatting the metadata into a definition language and transferring the reformatted metadata into a Definition Language (e.g. *IDL* - col. 17, lines 3-24) to a Development Environment for Process-based Applications (e.g. *business applications* – col. 17, lines 3-6 -- Note: business logic reads on Process based Applications) ; and using the reformatted metadata in procedure to be stored (e.g. Fig. 5-6; col. 13, line 63 to col. 14),

But Goodwin does not explicitly disclose checking in a loop in pre-determined time delay, whether a stored procedure has been added, modified or discarded, accessing metadata for the stored procedure within the network environment; and using the reformatted metadata in the Process-based Applications to update available metadata in the network environment. Goodwin discloses updating RDBMs schema data, and objects in models or views with periodically update of server data (e.g. col. 16, line 45-64); hence has suggested a relational database usage of a periodic code execution to go through each record to update the schema database on the servers. The concept of running an iterative loop to address each and individual record therein would be inherent. Hence, based on such teaching, it would have been obvious for one skill in the art at the time the invention was made to provide a stored procedure with procedure stored within the RDBMS environment - in Goodwin server database, so that periodic update can be done by invoking such stored procedure using a iterative looking whether a record is modified added or

Art Unit: 2193

discarded and provide the updating operation accordingly in order to provide the environment with the latest object required for further reuse of the views of models as intended above (e.g. col. 16, line 45-64).

Nor does Goodwin explicitly teach reformatting into a Workflow Definition Language being a component of IBM MQSeries. Goodwin discloses reusable definition language to support code application development for business logic (e.g. col. 10, line 54 to col. 11, line 17; Fig. 3; *business logic, unified models* – col. 16, line 65 to col. 27; *business logic* - col. 17, lines 2-28). Bowman in a network-centric framework to implement a particular business logic similar to Goodwin, discloses Workflow and MQ series (col. 70, line 56 to col. 71, line 6; col. 115, line 58 to col. 117, line 13). Based on the need to propagate update data from server to accommodate most appropriate data in order to fulfill client request by Goodwin (Fig. 1-3), it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement Goodwin's distribution of metadata via servers database update/synchronization by using IBM servers following a MQ Series product if servers happen to be compatible with such product because this enhancement would alleviate resources (see col 71, lines 3-5) and also to integrate metadata in a workflow services in order to better support integration of the business applications set forth above according to the benefits pointed out by Bowman (see col. 116, lines 10-25).

As per claim 24, the process of updating database being performed by a stored code on a periodic basis as suggested by Goodwin was known and recognized in RDBMS for being set according to a predetermined time period so to start on based on that automated setting. Hence, the limitation of claim 24 would have been obvious in light of Goodwin's suggestion and falls under the obviousness rationale set forth therefor.

As per claim 26, this claim recites a system having means to perform the limitations corresponding to claim 23 above, hence incorporates the respective rejection to address the limitations as recited therein.

Response to Arguments

6. Applicant's arguments submitted 9/13/2005 with respect to claims 1-21 have been considered but are mostly moot in view of the new ground(s) of rejection. And these new grounds of rejection are necessitated by the amendments. Further, most of Applicant's arguments evolved from the subject matter newly added; such subject matter is now being addressed under the new grounds of rejection thus set forth herein.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2193

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence – please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAT
November 18, 2005


KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100